

In the Drawings

Please replace Figures 1-10 with the drawings indicated on the attached sheets.

REMARKS/ARGUMENTS

Claims 1-12 remain pending in this application with claims 3, 5-7 and 12 being indicated as allowable and claims 1, 8, 10 and 11 being amended by this response.

Objection to the Drawings

The Drawings are objected to for lacking uniformly thick and clear lines. Substitute drawings are being submitted herewith. The substitute drawings have been amended in accordance with the comments of the Examiner to have uniformly thick lines, numbers and letters that are well defined and clear. Thus, it is respectfully submitted that this objection is satisfied and should be withdrawn.

Objection to the Abstract

The Abstract of the disclosure is objected to for certain informalities. The Abstract has been amended in accordance with the comments of the Examiner, removing patent claim phraseology and implied phrases. Thus, it is respectfully submitted that the that this objection is satisfied and should be withdrawn.

Objection of Claims 1 and 10

Claims 1 and 10 are objected to for informalities. Claims 1 and 10 have been amended in accordance with the comments of the Examiner. In view of the above remarks and amendments to the claims it is respectfully submitted that this objection is satisfied and should be withdrawn.

Rejection of Claims 1, 2, 4, 9 and 11 under 35 U.S.C. 102(b)

Claims 1, 2, 4, 9 and 11 are rejected under 35 U.S.C. 102(b) as being unpatentable over Desclos et al. (US 6,160,512).

The present claimed invention provides a device for receiving and/or transmitting electromagnetic waves with radiation diversity. The device includes, on a common substrate provided with a ground plane, at least a first slot antenna (i). The slot is realized in the ground plane in the form of a closed curve of perimeter equal to $k'\lambda_s$ where λ_s is the wavelength in the slot at the operating frequency and k' is an integer. The first antenna is electromagnetically coupled to a first supply line. A second antenna radiates in a direction parallel to the substrate. The second antenna is positioned inside the curve forming the first antenna and is connected to a second supply line. The first and second supply lines are connected via a switching means to means for exploiting the electromagnetic waves.

A “tendency to fade, caused by the multiplicity of pathways, can lead to a significant degradation both in the quality of the received signal and in the performance of the system” (Page 1, lines 26-29). Thus, the present claimed invention “switch[es] from one antenna to the other [to] allow the channel response through the antenna to be modified and allow the system to thus benefit from a gain in diversity” (Page 3, lines 26-29).

Desclos et al. describe “a linear antenna...placed in the axis of a circular polarized antenna...The linear antenna can be optimized for a terrestrial communication system while the circular polarized antenna can be optimized for a satellite system” (Abstract). “The circular polarized antenna may be a printed patch antenna with a slot in its center and a monopole antenna may be placed in the slot” (Col. 2, lines 1-3). “The slot 13 has dimensions D_1 [(width)] of 15mm and D_2 [(length)] of 15 mm...allowing to let pass the monopole antenna 11 through a hole 17 going through the entire substrate” (Col. 4, lines 14-17).

The Office Action asserts that Desclos et al. disclose a slot antenna with the slot in the form a closed curve. However, Desclos et al., as mentioned by the Examiner, describe a **printed patch antenna** 12 with a slot 13 in its center. The slot 13 is of a **rectangular shape** (as seen in Figures 3, 7 and 8) and defined by D_1 and D_2 . This is unlike the annular slot of the present claimed invention which “exploits the fact that

antennas of the **slot type** [are] formed by a **closed curve**...[and] exhibit virtually omnidirectional radiation patterns with minima situated...in the plane of the substrate” (Page 3, lines 18-24). Therefore, Desclos et al. neither disclose nor suggest “at least a first **slot antenna** (i), **the slot** being realized in the ground plane **in the form of a closed curve**” as recited in claim 1 of the present invention.

The Office Action further asserts that Desclos et al. disclose a slot realized in the ground plane of the substrate. However, Desclos et al. describe a slot 13 “allowing to let pass the monopole antenna 11 through a hole 17 **going through the entire substrate**” (Col. 4, lines 15-17 and Figure 4). This is unlike the present claimed invention in which the slot is realized in the ground plane—“the ground plane 9...formed on the lower surface of the substrate 3” (Page 9, lines 20-21). Therefore, Desclos et al. neither disclose nor suggest “at least a first **slot antenna** (i), **the slot being realized in the ground plane** in the form of a closed curve” as recited in claim 1 of the present invention.

Additionally, Desclos et al. is concerned with a multimode antenna simultaneously optimized for both terrestrial and satellite communication. The monopole antenna is optimized for a terrestrial communication system and the patch antenna is optimized with the slot 13 for a satellite system. This is wholly unlike the present claimed invention which is concerned with a device for receiving and/or transmitting electromagnetic waves with radiation diversity. The present claimed invention “switch[es] from one antenna to the other [to] allow the channel response through the antenna to be modified and allow the system to thus benefit from a gain in diversity” (Page 3, lines 26-29). Thus, Desclos et al. neither disclose nor suggest a “switching means...for exploiting the electromagnetic waves” as recited in claim 1 of the present invention.

Although not formally rejected, the Office Action asserts that Desclos et al. disclose the principles of the present claimed invention as described in claims 8 and 10. As claims 8 and 10 are dependant on independent claim 1 it is respectfully submitted that they are allowable for the same reasons as discussed above in regards to claim 1.

As claims 2, 4, 9 and 11 are dependant on independent claim 1 it is respectfully submitted that they are allowable for the same reasons as discussed above in regards to claim 1. Thus, it is respectfully submitted that this rejection is satisfied and should be withdrawn.

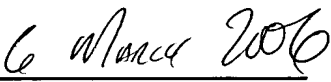
In view of the above remarks and amendments to the claims it is respectfully submitted that there is no 35 USC 112 compliant enabling disclosure in Desclos et al. showing the above discussed features. It is thus further respectfully submitted that claims 1, 2, 4 and 8-11 are not anticipated by Desclos et al. It is thus, further respectfully submitted that this rejection is satisfied and should be withdrawn.

The applicant respectfully submits, in view of the above arguments, that the all arguments made by the Examiner have been addressed and this rejection should be withdrawn. Therefore, the applicant respectfully submits that the present claimed invention is patentable.

No fee is believed due. However, if a fee is due, please charge the additional fee to Deposit Account 07-0832.

Respectfully submitted,

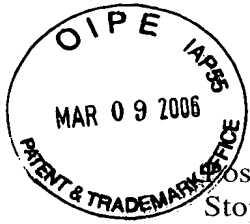
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